

## **ABSTRACT OF THE DISCLOSURE**

A micro-programmable controller is disclosed for parsing a packet and encapsulating data to form a packet. The micro-programmable controller loads an instruction within the micro-controller. The instruction word has a plurality of instruction fields. The micro-controller processes the plurality of instruction fields in parallel. Each instruction field is related to a specific operation for parsing a packet or encapsulating data to form a packet. The programmable micro-controller can be programmed to handle packets to support new types of protocols by programming a template to string specific routines together based on an instruction set specific for parsing and encapsulating.